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ABSTRACT

Designed for use by instructors using the "Health and Safety Education Book" (International Brotherhood of Painters and Allied Trades/Occupational Safety and Health Act), this book contains quizzes specifically for painters, abrasive blasters, tapers, paint makers, and floorcoverers. Quizzes included in the book focus on testing areas such as (1) general knowledge of occupational accidents, (2) ability to recognize potential health and safety hazards, (3) hazardous substances, (4) personal protective equipment, and (5) preventive measures. (LRA)

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ED176120

THE IBPAT HEALTH AND SAFETY EDUCATION BOOK

Quiz Book

- **PAINTERS**
- **ABRASIVE BLASTERS**
- **TAPERS**
- **PAINT MAKERS**
- **FLOORCOVERERS**

CE 022 788

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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1. Please answer the following questions:

   a. Have you ever attended a program about occupational health?
   ___ yes ___ no ___ not sure

   b. Have you ever attended a program about occupational safety?
   ___ yes ___ no ___ not sure

   c. As a topic, occupational health is: (Place an "X" on the scale)

   1—interesting 5—okay 10—boring

   d. As a topic, occupational safety is:

   1—interesting 5—okay 10—boring

   e. In my work, I believe health is:

   1—not important 5—important 10—vital

   f. In my work, I believe safety is:

   1—not important 5—important 10—vital

   g. Safety programs I have attended in the past have been:

   1—of no use on the job 5—of some use on the job 10—very useful on the job

2. Below are the main topics to be covered in this program. Please mark the ones that are of most interest to you:

   ___ a. economic effects of occupational injury and disease
   ___ b. occupational safety and health legislation
   ___ c. how accidents happen
   ___ d. occupational health hazards
   ___ e. controlling occupational hazards
   ___ f. employee rights and responsibilities

3. How many people do you think die from work-related injuries and illnesses each year? _____

Following are ten "facts" about workplace injuries and illnesses. Please mark all the ones you think are true.

___ 1. Occupational deaths claim three times as many people as murder and twice as many as automobile accidents.

___ 2. More workers died from occupational injuries and illnesses in 1975 and 1976 than all the U.S. soldiers killed in Korea and Vietnam put together.

___ 3. More workers die yearly from occupational causes than the yearly estimate of Americans killed in World War II.

___ 4. Nearly 60,000 workers die yearly from work-related causes.

___ 5. Approximately five million workers yearly report a work-related illness or injury.

___ 6. Each year 400,000 workers suffer from occupational diseases.

___ 7. Each year one-in-every-eight workers can expect temporary or permanent disability from working.

___ 8. Lost-time from accidents in 1975 was 365 million days, over 10 times the amount lost from strikes.

___ 9. The cash cost from accidents in 1975 was 16 billion dollars.

___10. The dollar cost of accidents is equivalent to 1,600,000 jobs at $10,000 per year—enough to reduce unemployment by two percentage points.

GENERAL PAINTERS

1. **Do you think General Painters lose more time, on the average, from work-related accidents than all other workers do?**

   ___ **YES** ___ **NO**

2. **Which occupational diseases do you think Painters get? You can choose more than one.**

   ___ **a. Dermatitis**

   ___ **b. Chronic Bronchitis**

   ___ **c. Asbestosis**

   ___ **d. Silicosis**

   ___ **e. Other** _____

3. **Which of these occupational injuries do you think happen most frequently to Painters? Number them in order from most frequent to least frequent.**

   ___ **a. Injuries from motor vehicle accidents**

   ___ **b. Strains from lifting or over-exertion**

   ___ **c. Burns from fires or torches**

   ___ **d. Injuries resulting from falls**

   ___ **e. Injuries caused by blows from objects or by striking against objects**

PAINT MAKERS

1. **Do you think Paint Makers lose more time, on the average, from work-related accidents than all other workers do?**

   ___ **YES** ___ **NO**

2. **Which occupational diseases do you think Paint Makers get? You can choose more than one.**

   ___ **a. Dermatitis**

   ___ **b. Bronchitis**

   ___ **c. Lead Poisoning**

   ___ **d. Cancer**

   ___ **e. Other** _____

3. **Which occupational injuries do you think happen most to Paint Makers? Number them in order from most frequent to least frequent.**

   ___ **a. Motor vehicle accidents**

   ___ **b. Strains from lifting or over-exertion**

   ___ **c. Burns from fires or torches**

   ___ **d. Falls**

   ___ **e. Injuries caused by blows from objects or by striking against objects**

   ___ **f. Other:** _____

FLOORCOVERERS

1. **Do you think Floorcoverers lose more time, on the average, from work-related accidents than all other workers do?**

   ___ **YES** ___ **NO**

2. **Which occupational diseases do you think Floorcoverers get? You can choose more than one.**

   ___ **a. Dermatitis**

   ___ **b. Asbestosis**

   ___ **c. Bronchitis**

   ___ **d. Other** _____

3. **Which occupational injuries do you think happen most to Floorcoverers? Number them in order from most frequent to least frequent.**

   ___ **a. Strains from lifting or over-exertion**

   ___ **b. Burns from torches or fires**

   ___ **c. Falls**

   ___ **d. Injuries caused by blows from objects or by striking against objects**

   ___ **e. Other** _____

1. **Is an accident about to happen?**

   ___ **YES** ___ **NO**

2. **If an accident is going to happen, what caused it?**

   ___ **a. No guardrails on the scaffold**

   ___ **b. Carbon monoxide from the unvented gas heater**

   ___ **c. Vapors from the paints and solvents**

   ___ **d. All three of the above**

   ___ **e. The painter was accident-prone**

   ___ **f. Bad luck or chance**

   ___ **g. The painter's number was up**

3. **What other accidents do you think might have happened in a situation like this?**

   ___ **a. The gas heater might ignite the paint and solvent vapors, causing an explosion or fire.**

   ___ **b. The paint bucket might fall on someone below.**

   ___ **c. After working like this for years, the painter might develop chronic bronchitis.**

4. **Was there any way this accident could be avoided?**

   ___ **YES** ___ **NO** ___ **MAYBE**

5. **Have you ever worked in a situation like this?**

   ___ **YES** ___ **NO** ___ **NOT SURE**

   If so, why? Please explain: _____

   _____

   _____

What do you think "workplace accident" means?

___ **a. Workplace accidents are acts of God.**

___ **b. Workplace accidents are a random ordering of events that leads to perfunctory completion of work.**

___ **c. Workplace accidents are dangerous conditions.**

___ **d. Workplace accidents are events or situations that interrupt normal work activity and may cause personal injury, death or property damage.**

Please mark the following answers with a "T" for true and an "F" for false.

Workplace accidents are caused by:

___ 1. Improperly guarded machinery

___ 2. Natural side-effect of production

___ 3. Poor eyesight

___ 4. A worker refusing to wear a respirator in a known toxic environment

___ 5. Worker carelessness

___ 6. Flying particles

___ 7. Chance

___ 8. Slippery walking and working surfaces

___ 9. A new worker in a paint plant failing to ground a vat before draining the solvent

___10. A worker with a hearing impairment

___11. Accident-prone workers

___12. Fatigued or tired workers

___13. Your number is up

___14. A worker pouring flammable liquids in the presence of an unseen open flame

___15. A worker removing the guard from a machine

___16. Improper tool and equipment design

___17. The difficulty of a job operation

___18. The speed required to meet job demands

In the accident of the painter who fell from his scaffold just presented, which were unsafe acts and which were unsafe conditions? For each of the three items below, circle whether it is an unsafe act or an unsafe condition.

___ **a. The toxic environment created by the carbon monoxide and the paint and solvent vapors**

circle one: UNSAFE ACT UNSAFE CONDITION

___ **b. No guardrails and toeboards on the scaffold**

circle one: UNSAFE ACT UNSAFE CONDITION

___ **c. The worker failed to provide adequate ventilation**

circle one: UNSAFE ACT UNSAFE CONDITION

GENERAL PAINTERS

Following are six situations. Read each description and check whether it is a safety hazard or a health hazard or a combined safety and health hazard. After deciding what type of hazard it is, then check whether it is created by an unsafe act or by an unsafe condition or by both an unsafe act and an unsafe condition.

1. **A drywall taper does not heed warnings and keeps his unsheathed taping knife in the hip pocket of his work pants.**

   This is a

   ___ **safety hazard**

   ___ **health hazard**

   ___ **combined safety and health hazard**

   This hazard is created by

   ___ **an unsafe act**

   ___ **an unsafe condition**

   ___ **an unsafe act and an unsafe condition**

2. **A painter is sent into a new work situation without supervision. The new room is filled with carbon monoxide from an improperly vented gas heater.**

   This is a

   ___ **safety hazard**

   ___ **health hazard**

   ___ **combined safety and health hazard**

   This hazard is created by

   ___ **an unsafe act**

   ___ **an unsafe condition**

   ___ **an unsafe act and an unsafe condition**

3. **A painter does not properly hook his paint bucket to his ladder. Another painter without a hard hat is mixing paint beneath the ladder.**

   This is a

   ___ **safety hazard**

   ___ **health hazard**

   ___ **combined safety and health hazard**

   This hazard is created by

   ___ **an unsafe act**

   ___ **an unsafe condition**

   ___ **an unsafe act and an unsafe condition**

4. **An electrician working near a painter drops a live wire onto the painter's metal scaffold.**

   This is a

   ___ **safety hazard**

   ___ **health hazard**

   ___ **combined safety and health hazard**

   This hazard is created by

   ___ **an unsafe act**

   ___ **an unsafe condition**

   ___ **an unsafe act and an unsafe condition**

5. **A sandblaster is required to work on a scaffold that is not tied-in properly to the building. The wind gusts and causes the entire scaffold to fall away from the building.**

   This is a

   ___ **safety hazard**

   ___ **health hazard**

   ___ **combined safety and health hazard**

   This hazard is created by

   ___ **an unsafe act**

   ___ **an unsafe condition**

   ___ **an unsafe act and an unsafe condition**

6. **Five painters are working in a closed room without ventilation and heated by a gas heater. The lids have been left off their solvent and paint containers.**

   This is a

   ___ **safety hazard**

   ___ **health hazard**

   ___ **combined safety and health hazard**

   This hazard is created by

   ___ **an unsafe act**

   ___ **an unsafe condition**

   ___ **an unsafe act and an unsafe condition**

PAINT MAKERS

Following are six situations. Read each description and check whether it is a safety hazard or a health hazard or a combined safety and health hazard. After deciding what type of hazard it is, then check whether it is created by an unsafe act or by an unsafe condition or by both an unsafe act and an unsafe condition.

1. **A paint maker does not heed warnings and refuses to wear gloves while cleaning paint vats with styrene.**

   This is a

   ___ **safety hazard**

   ___ **health hazard**

   ___ **combined safety and health hazard**

   This hazard is created by

   ___ **an unsafe act**

   ___ **an unsafe condition**

   ___ **an unsafe act and an unsafe condition**

2. **A new worker in a plant forgets to ground the container before transferring solvent.**

   This is a

   ___ **safety hazard**

   ___ **health hazard**

   ___ **combined safety and health hazard**

   This hazard is created by

   ___ **an unsafe act**

   ___ **an unsafe condition**

   ___ **an unsafe act and an unsafe condition**

3. **A paint maker loading pigment powder refuses to wear a dust mask respirator.**

   This is a

   ___ **safety hazard**

   ___ **health hazard**

   ___ **combined safety and health hazard**

   This hazard is created by

   ___ **an unsafe act**

   ___ **an unsafe condition**

   ___ **an unsafe act and an unsafe condition**

4. **Two paint makers feed raw materials into a grinder without a guard.**
   This is a
   - ___ **safety hazard**
   - ___ **health hazard**
   - ___ **combined safety and health hazard**

   This hazard is created by
   - ___ **an unsafe act**
   - ___ **an unsafe condition**
   - ___ **an unsafe act and an unsafe condition**

5. **A paint maker fails to use a dollie or lifting device to move a solvent barrel.**
   This is a
   - ___ **safety hazard**
   - ___ **health hazard**
   - ___ **combined safety and health hazard**

   This hazard is created by
   - ___ **an unsafe act**
   - ___ **an unsafe condition**
   - ___ **an unsafe act and an unsafe condition**

6. **A paint maker never washes before eating lunch.**
   This is a
   - ___ **safety hazard**
   - ___ **health hazard**
   - ___ **combined safety and health hazard**

   This hazard is created by
   - ___ **an unsafe act**
   - ___ **an unsafe condition**
   - ___ **an unsafe act and an unsafe condition**

FLOORCOVERERS

Following are six situations. Read each description and check whether it is a safety hazard or a health hazard or a combined safety and health hazard. After deciding what type of hazard it is, then check whether it is created by an unsafe act or by an unsafe condition or by both an unsafe act and an unsafe condition.

1. **A floorcoverer does not heed warnings and keeps his unsheathed knife in the hip pocket of his work pants.**

   This is a

   ___ **safety hazard**

   ___ **health hazard**

   ___ **combined safety and health hazard**

   This hazard is created by

   ___ **an unsafe act**

   ___ **an unsafe condition**

   ___ **an unsafe act and an unsafe condition**

2. **A floorcoverer is sent into a new work situation without supervision. The room is filled with carbon monoxide from an improperly vented gas heater.**

   This is a

   ___ **safety hazard**

   ___ **health hazard**

   ___ **combined safety and health hazard**

   This hazard is created by

   ___ **an unsafe act**

   ___ **an unsafe condition**

   ___ **an unsafe act and an unsafe condition**

3. **A painter does not properly hook his paint bucket to his ladder. A floorcoverer passes below without a hard hat.**

   This is a

   ___ **safety hazard**

   ___ **health hazard**

   ___ **combined safety and health hazard**

   This hazard is created by

   ___ **an unsafe act**

   ___ **an unsafe condition**

   ___ **an unsafe act and an unsafe condition**

4. A floorcoverer cuts the ground plug off his carpet seamer.

   This is a

   ___ safety hazard

   ___ health hazard

   ___ combined safety and health hazard

   This hazard is created by

   ___ an unsafe act

   ___ an unsafe condition

   ___ an unsafe act and an unsafe condition

5. A floorcoverer without a respirator is working in a room where a drywall taper is mixing and sanding asbestos containing spackle.

   This is a

   ___ safety hazard

   ___ health hazard

   ___ combined safety and health hazard

   This hazard is created by

   ___ an unsafe act

   ___ an unsafe condition

   ___ an unsafe act and an unsafe condition

6. A floorcoverer is removing asbestos felt with an alcohol solution in a closed room. The room is heated by an unvented gas heater.

   This is a

   ___ safety hazard

   ___ health hazard

   ___ combined safety and health hazard

   This hazard is created by

   ___ an unsafe act

   ___ an unsafe condition

   ___ an unsafe act and an unsafe condition

Following are four possible reasons why new chemical substances were introduced into the workplace without adequate testing. Check the ones you think are right.

___ **a. There was not always enough TIME to test every new chemical substance. Some chemical substances were needed immediately, as happened during World War II, for example.**

___ **b. Employers often DID NOT KNOW that some chemical substances are harmful.**

___ **c. The GOVERNMENT'S ability to protect workers was not widely established.**

___ **d. Research of the effects of exposure to chemical substances is EXPENSIVE and often there was not enough money available.**

There are three main ways in which hazardous substances enter your body. Do you know what they are? Choose the answers you think are correct.

Hazardous substances may enter your body through:

___ a. the air-line of your supplied-air respirator

___ b. inhalation

___ c. your lunch

___ d. neoprene gloves

___ e. skin absorption

___ f. your dust respirator

___ g. ingestion

___ h. holes in protective gloves, shirts and pants

___ i. smoking a cigarette

___ j. osmosis

The harmful effects a hazardous substance has on your body depend upon four things. Check the four items you think are correct.

___ **1. The odor of the substance.**

___ **2. The physical state of the substance.**

___ **3. The color of the substance.**

___ **4. The nature of the substance.**

___ **5. The concentration or dose of the substance.**

___ **6. The duration or length of your exposure to the substance.**

Link the practical examples with the Basic Control Method:

Basic Control Method:

Substitution
ex: 3

_____ _____ _____

Engineering Controls

_____ _____ _____

_____

Administrative Procedures

_____ _____

Personal Protective Equipment

_____ _____ _____

_____ _____

Practical Examples:

1. **covered metal containers**
2. **a properly selected respirator**
3. **using grit instead of silica sand**
4. **rotating workers from hazardous to non-hazardous areas**
5. **spray booths**
6. **long-sleeved shirts or blouses**
7. **using safer substances like methylene chloride instead of the more harmful substances like trichloroethylene or carbon tetrachloride**
8. **pre-mixed spackles**
9. **frequent rest breaks**
10. **properly selected dust mask**
11. **wet abrasive blasting attachments**
12. **trouser legs rolled down and taped to the ankles**
13. **gloves and barrier creams or salves**
14. **ventilation systems**

Personal protective equipment is the most important hazard control for most painters and allied tradesworkers even though it should be used only as a last resort. Why should personal protective equipment be used? You can choose more than one answer.

PERSONAL PROTECTIVE EQUIPMENT should be used because:

___ 1. **it is the most ideal means of controlling workpiace hazards.**

___ 2. **installing engineering controls on temporary jobsites is impractical.**

___ 3. **it is cheap, easy to use and made by reputable manufacturers.**

___ 4. **it will provide protection from an existing hazard.**

___ 5. **it is preferred by painters and allied tradesworkers over other forms of hazard controls.**

___ 6. **it meets minimum comfort and quality requirements.**

___ 7. **it must be used until other hazard controls are installed.**

___ 8. **it must be used while safer substitutes or engineering controls are being developed.**

___ 9. **it permits you to perform the job with the desired quality and in minimum time.**

___10. **it is the only effective control against the hazards encountered by painters and allied tradesworkers.**

___11. **it must be used when a hazard exists even though other control measures have been installed.**

Who approves personal protective equipment? There are only three correct answers.

___ 1. **Mining Safety and Health Administration (MSHA)**

___ 2. **Occupational Safety and Health Administration (OSHA)**

___ 3. **National Safety Council (NSC)**

___ 4. **Safety Committee of the Building and Construction Trades Department, AFL-CIO**

___ 5. **National Institute for Occupational Safety and Health (NIOSH)**

___ 6. **Bureau of Mines (BOM)**

___ 7. **National Aeronautics and Space Administration (NASA)**

GENERAL PAINTERS

SITUATION I

You are working 30 feet above the ground on a two-point suspension scaffold, abrasive blasting a tank with sand.

___ I have worked in a situation like this

___ I did use personal protective equipment

Check the personal protective equipment used:

___ leather gauntlet gloves

___ ear plugs

___ leather apron

___ neoprene gloves

___ air-fed helmet

___ dust mask

___ safety shoes

___ safety belt and lifeline

___ I have not worked in a situation like this

SITUATION II

You are spray painting a bridge with red lead paint from a needle beam scaffold. Safety belts and lifelines cannot be used because of the location of the scaffold.

___ I have worked in a situation like this

___ I did use personal protective equipment

Check the personal protective equipment used:

___ air-purifying respirator with organic vapor cartridge and paint spray filter

___ leather gauntlet gloves

___ safety net

___ ear plugs

___ dust mask

___ paint spray hood

___ I have not worked in a situation like this

SITUATION III

You are working next to a taper who is mixing and sanding spackle. You notice on the label of his bag the words, "contains asbestos" and there is dust in the air.

___ **I have worked in a situation like this**

___ **I did use personal protective equipment**

Check the personal protective equipment used:

___ **air-purifying respirator with organic vapor cartridge**

___ **neoprene gloves**

___ **dust mask**

___ **hard hat**

___ **safety shoes**

___ **airline respirator**

___ **I have not worked in a situation like this**

SITUATION IV

You are spraying the interior of a tank with a paint that contains solvent. Your eyes are watering. Above you on a scaffold are people repairing the tank.

___ **I have worked in a situation like this**

___ **I did use personal protective equipment**

Check the personal protective equipment used:

___ **dust mask respirator**

___ **hard hat**

___ **airline respirator**

___ **paint spray hood**

___ **gauntlet gloves**

___ **eye goggles**

___ **I have not worked in a situation like this**

PAINT MAKERS

SITUATION I

You are working below a platform where co-workers are stacking materials.

___ I have worked in a situation like this

___ I did use personal protective equipment

Check the personal protective equipment used:

___ leather gloves
___ safety belt and lifeline
___ hard hat
___ hard hat
___ eye goggles
___ respirator

___ I have not worked in a situation like this

SITUATION II

You are cleaning the inside of a vat with an organic solvent.

___ I have worked in a situation like this

___ I did use personal protective equipment

Check the personal protective equipment used:

___ leather apron
___ hard hot
___ full facepiece airline respirator
___ safety belt and lifeline
___ non-sparking safety shoes
___ protective gloves

___ I have not worked in a situation like this

SITUATION III

You are emptying lead powder into a mixer.

___ **I have worked in a situation like this**

___ **I did use personal protective equipment**

Check the personal protective equipment used:

___ **hard hat**

___ **safety belt and lifeline**

___ **particulate-removing respirator**

___ **eye goggles**

___ **leather apron**

___ **safety shoes**

___ **I have not worked in a situation like this**

SITUATION IV

You are unloading 55-gallon drums from a truck.

___ **I have worked in a situation like this**

___ **I did use personal protective equipment**

Check the personal protective equipment used:

___ **hard hat**

___ **protective gloves**

___ **dust mask**

___ **eye goggles**

___ **safety shoes**

___ **leather apron**

___ **I have not worked in a situation like this**

FLOORCOVERERS

SITUATION I

New tile is to be installed in a renovated house. To remove the old asbestos-backed tile, it is sanded down to the original flooring.

___ **I have worked in a situation like this**

___ **I did use personal protective equipment**

Check the personal protective equipment used:

___ **knee pads** ___ **ear muffs or plugs** ___ **hard hat**

___ **respirator** ___ **safety shoes** ___ **protective gloves**

___ **I have NOT worked in a situation like this**

SITUATION II

Carpeting is installed in a closet of a new home.

___ **I have worked in a situation like this**

___ **I did use personal protective equipment**

Check the personal protective equipment used:

___ **respirator** ___ **safety shoes** ___ **knee pads**

___ **hard hat** ___ **ear muffs or plugs** ___ **protective gloves**

___ **I have NOT worked in a situation like this**

SITUATION III

You are installing tile in a new house. In the room next to you, the walls are being spray painted. You can smell the vapors from the spray painting and your eyes are watering.

___ I have worked in a situation like this

___ I did use personal protective equipment

Check the personal protective equipment used:

___ respirator	___ eye goggles	___ hard hat
___ protective clothing	___ safety shoes	___ ear muffs or plugs

___ I have NOT worked in a situation like this

SITUATION IV

You must tile the kitchen floor in a new house. In order to bring the boxes of tile into the kitchen, you pass under a scaffold erected by a roofer.

___ I have worked in a situation like this

___ I did use personal protective equipment

Check the personal protective equipment used:

___ respirator	___ safety shoes	___ ear muffs or plugs
___ hard hat	___ protective gloves	___ eye goggles

___ I have NOT worked in a situation like this

SITUATION 1

You are cleaning a surface with an *organic solvent*. After a few minutes your eyes become *irritated* and water. On the solvent container you see:

Xylene
Warning! Flammable
Harmful if *Inhaled*
Irritating to the *Eyes*
Avoid breathing *Vapor*

You know from participating in this program that xylene *has warning properties at or below OSHA's permissible exposure limit* (PEL). From the information given place a check mark by the *inappropriate* respirators.

___ **1. Gas and Vapor removing air-purifying respirator with an ammonia cartridge and full facepiece**

___ **2. Single use dust mask respirator**

___ **3. Pressure-demand airline respirator with half-mask**

___ **4. Self-contained breathing apparatus with full facepiece**

___ **5. Gas and Vapor removing air-purifying respirator with an organic vapor cartridge and a full facepiece**

SITUATION 2

You are working around a drywall taper who is mixing spackle. Quite a lot of dust is generated in the mixing process. On the bag the spackle came in you see:

Contains *ASBESTOS FIBERS*
Avoid creating *Dust*
***Breathing Asbestos Dust* may cause**
Serious Bodily Injury

You know from participating in this program that *Asbestos* dust does not *Irritate the Eyes*. From the information given place a check mark by the *inappropriate* respirators.

___ **1. Gas and Vapor removing air-purifying respirator with an ammonia cartridge and full facepiece**

___ **2. Single use dust mask respirator**

___ **3. Pressure-demand airline respirator with half-mask**

___ **4. Self-contained breathing apparatus with full facepiece**

___ **5. Gas and Vapor removing air-purifying respirator with an organic vapor cartridge and a full facepiece.**

___ **6. Powered particulate-removing air-purifying respirator with full facepiece**

Following is a list of solvents Paint Makers might work with. Check the ones you work with.

___ **Ethyl Alcohol (Ethanol)**
___ **Benzene (Benzol)**
___ **Methylene Chloride**
___ **Ethylene Glycol (EG)**
___ **Methyl Ethyl Ketone (MEK)**
___ **Methyl Alcohol (Methanol)**
___ **Toluene (Toluol)**
___ **Trichloroethylene (Trichlor)**
___ **Methyl Isobutyl Ketone (MIBK)**
___ **Styrene**
___ **Carbon Tetrachloride (Carbon Tet)**
___ **Xylene**
___ **Perchloroethylene (Perchlor)**
___ **Other** _____

What factors must be considered when you select a respirator? You may choose more than one.

___ 1. **The PERMISSIBLE EXPOSURE LIMIT of the substance**

___ 2. **The WARNING PROPERTIES of the substance if it is a GAS or VAPOR**

___ 3. **The NATURE of the hazard or WHAT the hazard IS**

___ 4. **The EYE IRRITATION potential of the substance**

___ 5. **The CONCENTRATION of the substance**

___ 6. **The SKIN ABSORPTION potential of the substance**

___ 7. **The PHYSICAL STATE of the substance**

Following are 10 statements about compressed air. Check the ones you think are true:

COMPRESSED AIR:

___ 1. **cannot be used for cleaning unless the pressure is reduced to 30 psi.**

___ 2. **is flammable.**

___ 3. **tanks must be built to strict standards.**

___ 4. **tanks must have a safety valve.**

___ 5. **eliminates the hazards of exposure of lead chromates.**

___ 6. **never explodes.**

___ 7. **tanks must not have a valve between the tank and the safety valve.**

___ 8. **tanks must have a drain valve to remove water and oil.**

___ 9. **should be administered to a solvent-intoxicated worker.**

___10. **tanks must have a pressure gauge.**

Following are six possible hazards created by abrasive blasting with water. Check the ones you think are correct.

___ **1. mildew in blasting hose**

___ **2. slippery walking and working surfaces**

___ **3. drowning**

___ **4. contact with electrical current**

___ **5. water-on-the-knee**

___ **6. pollution of water supply**

An abrasive blaster needs personal protective equipment. Following is a list of personal protective equipment. Choose the equipment needed by abrasive blasters.

___ **a. safety shoes**

___ **b. heavy canvas or leather gauntlet gloves**

___ **c. dust mask respirator**

___ **d. ear plugs or muffs**

___ **e. neoprene gloves**

___ **f. air-fed abrasive blasting helmet**

___ **g. paint spray hood**

___ **h. shin guards**

___ **i. leather or heavy canvas apron**

Following are ten statements about blasting machines and hoses. Check the ones you think are correct.

___ 1. **A vacuum blasting machine is used where people or fragile objects are present.**

___ 2. **In a direct-pressure blasting machine, the sand is pressurized and mixed with the flow of compressed air at the tank.**

___ 3. **In a suction blasting machine, the sand and air move through different hoses to the suction gun where they are mixed just before entering the nozzle.**

___ 4. **The blasting hose is coated with carbon black compound to camouflage it for night blasting.**

___ 5. **High-velocity granules moving through the blasting hose can cause a build-up of static electricity which can shock the operator.**

___ 6. **The rule of thumb for choosing hoses is the bigger and the shorter the better.**

___ 7. **For a butt fit inside the coupling, the hose end must be square-cut.**

___ 8. **To prevent accidental disconnection, all couplings have to be safety-wired together; this is an OSHA requirement.**

___ 9. **An abrasive blaster always works alone.**

___10. **The lining of the blasting hose is coated with carbon black compound because it dissipates static electricity.**

Following are 15 statements about air compressors and personal protective equipment. Check the ones you think are right.

___ 1. **In sandblasting air compressors, 100 psi is the average working pressure.**

___ 2. **You can always rely on your pressure gauges to tell you if it is safe to open your sandpot lid.**

___ 3. **If the sandpot lid is hard to open, you should knock it open with a hammer.**

___ 4. **The air compressor needs to warm up before pressure builds in the receiving tank.**

___ 5. **Air compressors need clean, fresh air to operate properly.**

___ 6. **Air compressors are dirty machines and you shouldn't bother with trying to keep them clean.**

___ 7. **Whenever contents are under pressure, there is some possibility for an explosion.**

___ 8. **Since sandblasting has been limited to a few hours per day, it is okay to blast without an air-fed helmet.**

___ 9. **Proper foot support in safety shoes can reduce fatigue.**

___10. **It's not necessary for an abrasive blaster to protect his arms from minor scratches and cuts by abrasives.**

___11. **Taping your pant legs will help reduce your exposure to silica sand and to lead and chromate paint chips.**

___12. **An air-fed hooded helmet is a luxury that's not really needed by the abrasive blaster.**

___13. **A small hole in your air-fed helmet does not need to be repaired.**

___14. **Scratched windows in blasting helmets must be replaced.**

___15. **Before opening your sandpot, you should open the bleed valve to release the pressure.**

Following is a list of common chemicals. See how many of them you can match with a use or work process.

USE	*SOLVENT*
Paint Remover ____	**1. Methylene Chloride**
Paint Thinners and Solvents	**2. Toluene**
____ ____ ____ ____ ____	**3. Methyl Ethyl Ketone (MEK)**
____ ____	**4. Turpentine**
Stain Remover ____	**5. Carbon Tetrachloride**
	6. Methyl isobutyl Ketone (MIBK)
	7. Xylene
	8. Benzene
	9. Trichloroethylene

Your exposure to solvent vapors can be controlled by several methods. Check the methods used in your plant.

Solvent vapors can be controlled by:

___ **1. PERSONAL PROTECTIVE EQUIPMENT, such as respirators.**

___ **2. SUBSTITUTING a known safer product for a known harmful product.**

___ **3. ENGINEERING CONTROLS, such as ventilation.**

___ **4. ENGINEERING CONTROLS, such as enclosure and isolation.**

___ **5. ADMINISTRATIVE PROCEDURES, such as job rotation or frequent rest breaks.**

What elements must be present to create a fire or explosion? Choose the ones you think are right.

___ 1. Oxygen

___ 2. Paper or Wood

___ 3. A Flame

___ 4. Fuel

___ 5. O_2

___ 6. Source of Ignition

___ 7. Flammable Vapors or Liquids

___ 8. A Spark

Following are three hazards of the paint making industry. See if you can match the preventive measure with each hazard.

Hazard	*Preventive Measure*
a. unguarded machinery	1. good housekeeping
___ ___ ___	2. take stairs or elevator
b. fire	3. installation and maintenance of guards
___ ___ ___	4. don't wear bracelets, watches or rings
___	5. fire extinguishers
c. horseplay on hoists	6. keep long hair under a scarf or cap
___	7. properly grounded equipment
	8. ventilation

A list of several possible methods of machine guarding follows. Only four are correct. Choose the ones you think are right.

___ a. remote control

___ b. pressure maintenance

___ c. enclosure

___ d. return catastrophe

___ e. interlocking

___ f. automatic

Following are 30 possible substances of the Floorcovering trade. Check the ones you recognize.

___ 1. acetates
___ 2. fibrous glass
___ 3. carbon monoxide
___ 4. ethers
___ 5. Hi-Flash
___ 6. MDI
___ 7. glycols
___ 8. amberglucose
___ 9. ketones
___10. naptha
___11. alcohols
___12. nicotine
___13. xylene
___14. TDI
___15. toluene diisocyanate
___16. benzene
___17. oxygen
___18. toluene
___19. carbon dioxide
___20. benzolene
___21. carbon tetrachloride
___22. nectarine
___23. methylene chloride
___24. aromatic hydrocarbons
___25. necatorine
___26. aliphatic hydrocarbons
___27. solvents
___28. trichloroethylene
___29. asbestos
___30. chlorinated hydrocarbons

Following is a list of possible injuries that might happen to Floorcoverers. Check the ones that you think happen most often.

___ **strains from lifting or over-exertion**

___ **injuries from falling down, such as broken bones**

___ **lost limbs**

___ **gunshot wounds**

___ **severe cuts and lacerations**

___ **injuries from blows from objects**

___ **asphyxiation**

How can a Floorcoverer use his head to save his back? Check the methods you think are useful.

___ 1. **Know your lifting limit.**

___ 2. **Limber up before lifting.**

___ 3. **Keep your feet close to the load.**

___ 4. **Bend your knees and keep your back straight.**

___ 5. **Drink something hot before lifting.**

___ 6. **Hold the center of the load between your waist and shoulders.**

___ 7. **Meditate before you lift.**

___ 8. **Lift with your leg and shoulder muscles.**

___ 9. **Tie your load together first with electrical cable.**

___10. **Don't turn your body while lifting.**

___11. **Ask for help if the load is too heavy.**

___12. **Divide the load into smaller and lighter sections.**

___13. **Use a lifting device.**

___14. **Use straps.**

___15. **Use a dollie for heavy objects.**

___16. **Talk continuously while lifting.**

___17. **Keep your legs far apart.**

___18. **Wear non-slip safety shoes.**

___19. **Close your eyes while lifting.**

___20. **Use a forklift.**

Following are five types of disorders and diseases. Rank them in the order you think they might affect you as painters and allied tradesworkers.

Disorders and diseases of:

___ **a. the nose, throat, mouth, trachea, bronchial tubes and lungs**

___ **b. the stomach and intestines**

___ **c. the brain and the nervous system**

___ **d. the circulatory system, liver and kidneys**

___ **e. all other parts of the body, such as the skin**

Following are several things you can do to protect yourself from lengthy and concentrated exposure to the chemical culprits of the paint trades. Check the ones you think will work for you.

___ **1. Leave the trade.**

___ **2. Forget about the problems.**

___ **3. Refuse to work until the problems are solved.**

___ **4. Learn about the problems.**

___ **5. Make sure that all the controls are on the job.**

___ **6. Substitute safe products for unsafe products.**

___ **7. Install barriers between you and the problems.**

___ **8. Take regular coffee breaks.**

___ **9. Use personal protective equipment.**

Choose the three most harmful solvents from the list on the left and connect them with the substitute solvent on the right.

___ 1. benzene	a. styrene
___ 2. alcohol	b. methyl isocyanate
___ 3. methyl ethyl ketone	c. toluene
___ 4. carbon tetrachloride	d. ethylene glycol
___ 5. trichloroethylene	e. methylene chloride
___ 6. naptha	

Below are five engineering controls you should find on your jobsite. Check the ones you have seen and circle the ones you have used.

___ **1. fans or other ventilation systems**

___ **2. barriers, such as welding screens**

___ **3. solvent cans with resealable lids**

___ **4. portable partitions around spray painting**

___ **5. dead-man control switches on power tools**

Following is a list of administrative control measures that can help reduce your exposure to the chemical culprits of the print trades. Circle the ones you have used.

___ 1. job rotation

___ 2. vacations

___ 3. work staggering

___ 4. enforcement of OSHA regulations

___ 5. safety and health committees

___ 6. other: _____

Below is a list of personal protective equipment. Check what you think is the proper equipment and circle what you use.

___ 1. single use dust respirator

___ 2. air-fed abrasive blasting helmet

___ 3. ear plugs or muffs

___ 4. air-purifying respirator with organic vapor cartridge and paint spray filter

___ 5. paint spray hood

___ 6. neoprene gloves

___ 7. safety shoes

___ 8. safety belt and lifeline

___ 9. hard hat

___10. airline respirator

___11. eye goggles

___12. self-contained breathing apparatus with full facepiece

___13. leather apron

___14. long-sleeved shirts

___15. plastic faceshield

Below are 12 possible violations which may have contributed to Demitrius' death. Choose the ones you think are right.

___ 1. **Demitrius' paint bucket was not properly secured to the scaffold.**

___ 2. **Demitrius did not know how to swim.**

___ 3. **There were no guardrails or toeboards on the scaffold.**

___ 4. **Demitrius was not being supervised at the time of the accident.**

___ 5. **Demitrius was not wearing a NIOSH/MSHA approved respirator.**

___ 6. **Demitrius was not wearing a life jacket.**

___ 7. **Demitrius was not wearing a paint spray hood.**

___ 8. **Demitrius was not wearing a safety belt attached to a lifeline.**

___ 9. **There was no lifesaving skiff immediately available.**

___10. **Demitrius was solvent-intoxicated.**

___11. **The bridge was improperly erected.**

___12. **Demitrius was working in a high wind.**

Below are eight activities. Which ones is OSHA responsible for? Check as many as you think are right.

___ a. penalize workers for violations of safety and health rules

___ b. set standards requiring guards on hazardous machinery and limiting employee exposure to hazardous substances to safe levels

___ c. inspect workplaces for violations of safety and health standards

___ d. pay workers for injuries they receive on the job

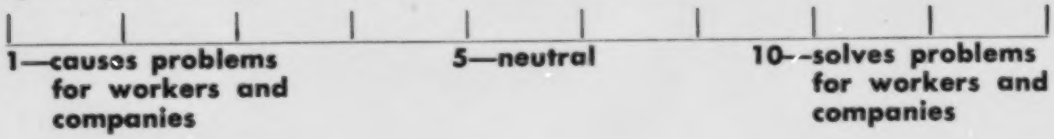
___ e. issue citations, propose penalties and require elimination of hazardous working conditions

___ f. monitor and evaluate state occupational safety and health plans

___ g. require employers to pay workers the "prevailing" wages on federally funded projects

___ h. fine employers for polluting the air and water

What is your opinion of OSHA? (Place an "X" on the scale)



A safety and health committee should have many functions. Below are several possibilities. Check the ones you think are appropriate.

A safety and health committee should:

___ 1. harass the employer by filing OSHA complaints for frivolous reasons.

___ 2. conduct workplace inspections.

___ 3. conduct investigations after any work-related accident.

___ 4. take two hours for lunch at a fancy restaurant.

___ 5. keep records of all work-related accidents and their resulting injuries and illnesses.

What happened? Following are several possible explanations. Check the one you think is correct.

___ **1. You are a swinger. You were out carousing last night and now you're just hung over.**

___ **2. You are narcoleptic and shouldn't be sandblasting at all.**

___ **3. Your air compressor is out of tune and does not have an overheating or carbon monoxide alarm to warn you. Carbon monoxide, an odorless, colorless and tasteless gas, has been creeping into your airline.**

___ **4. You decided to take a dive, but forgot you were wearing a safety line.**

Two other necessary protections are missing here. What are they? Check the two you think are right.

___ **1. Guardrail and toeboard**

___ **2. Organic vapor cartridge respirator**

___ **3. Shoulder pads**

___ **4. Air-purifier between the airline and the compressor**

___ **5. A fan**

Following are several choices for respiratory protection. Pick the one you think is best.

___ **1. Single use dust respirator.**

___ **2. NIOSH/MSHA approved air-fed abrasive blasting helmet.**

___ **3. Air-purifying respirator with organic vapor cartridge.**

___ **4. A handkerchief tied around the head and covering the nose and mouth.**

Following are five situations. Below each situation is a list of personal protective equipment. Check the equipment that should be used in each situation.

1. **Sandblasting inside the hull of a ship.**

___ leather gauntlet gloves
___ safety-toe shoes
___ safety belt attached to a life line
___ heavy canvas apron

2. **Sandblasting on the side of a tank from a spider.**

___ safety belt attached to a life line
___ safety-toe shoes
___ leather gauntlet gloves
___ heavy canvas apron

3. **Sandblasting in an enclosed blast room.**

___ heavy canvas apron
___ leather gauntlet gloves
___ safety-toe shoes
___ safety belt attached to a life line

4. **Sandblasting a bridge from a two-point suspension scaffold.**

___ safety belt attached to a life line
___ safety-toe shoes
___ U.S. Coast Guard approved life vest
___ heavy canvas apron
___ lifesaving skiff

5. **Sandblasting brick from a steel pole scaffold for the renovation of a house.**

___ **safety-toe shoes**

___ **heavy canvas apron**

___ **leather gauntlet gloves**

___ **safety belt attached to a life line**

Are the half-mask organic vapor respirators really providing adequate protection in the present work situation? Below are several possible answers. Check the explanation you think is correct.

___ **1. Since the concentration of toluene throughout the epoxy division is within the maximum permissible under current OSHA standards, the half-mask vapor respirator is the best respirator protection for this situation.**

___ **2. Normally, the organic vapor respirator would be appropriate for the organic vapor exposure; however, because of the benzene contamination and resultant exposure of 10 parts per million, the organic vapor respirator is not appropriate.**

___ **3. An organic vapor respirator is totally inappropriate. The best respirator for this situation is a particulate removing air-purifying respirator.**

Following are three possible reasons why the respirator is not offering protection. Check the correct one.

___ **1. The beard prevents a snug fit of the respirator against the face.**

___ **2. The organic vapor cartridge respirator is not suitable protection against styrene.**

___ **3. The respirator is on upside down.**

If the respirator fits properly, what's wrong? Following are four possibilities. Choose the right one.

___ **1. The respirator was left out all night and developed vapor-lock.**

___ **2. This worker does not really smell styrene; he only imagines that he does.**

___ **3. The absorbent material in the organic vapor cartridge is probably used up.**

___ **4. The styrene has eaten holes in the rubber of the respirator's mask.**

Below are several choices of respiratory protection. Which one is needed by a painter who is brush painting latex inside an office building?

___ **1. An organic vapor respirator with paint spray filter.**

___ **2. A single use dust mask respirator.**

___ **3. No respiratory protection is needed in this situation.**

___ **4. A continuous flow pressure demand airline respirator.**

For protection while spray painting epoxy cut with xylene, it's just a matter of strapping on the organic vapor respirator that's been in the tool box for three months. Right? Following are several possible answers. Choose any you think are correct.

___ **1. Wrong. All cartridges have a limited life, and the cartridge in this respirator is probably used up even though it has never been used.**

___ **2. Right. If the respirator has been kept in its original sealed bag, unopened, then it will provide effective protection when used in accordance with the manufacturer's specifications.**

___ **3. This respirator is not proper protection for epoxy cut with xylene. This painter should ask the employer for a single use dust mask respirator with a paint spray hood.**

Using the Respirator Selection Table in your manual and the information given below, determine what type of protection is necessary.

I. **MEK is a physical substance.**

II. **MEK may cause eye irritation at the exposure level.**

III. **The physical state is a vapor.**

IV. **MEK vapor has warning properties at or below the permissible exposure limit.**

V. **The concentration of MEK vapors is at a level which is immediately dangerous to life and health (above the lower explosive limit).**

Now check the respirator from the list below that should be worn in this situation.

___ **A. A NIOSH/MSHA approved particulate-removing respirator.**

___ **B. An organic vapor respirator with an attached spray paint filter and chemical goggles.**

___ **C. A positive pressure air-fed hood or helmet.**

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Vapor concentrations can cause other hazards. Following are several possibilities. Check the ones that are caused by solvent vapor build-up in a tank.

___ **1. The vapor might be ignited by a spark from steel-toe safety shoes, causing an explosion.**

___ **2. The vapors could saturate the atmosphere, causing the spray nozzle to clog.**

___ **3. The painter could be overcome by the vapors, which are hazardous to life and health.**

What is the appropriate respiratory protection in this situation? Below are several choices. Check the best one for the job.

___ **1. A dust mask respirator.**

___ **2. An organic vapor respirator with a spray paint pre-filter and goggles.**

___ **3. An air-fed hood.**

With lungs and skin properly protected, what other precautions should be taken? Below are several suggestions. Check the ones you think are necessary.

___ **1. A cup of coffee.**

___ **2. A safety belt attached to a life line.**

___ **3. A safety net.**

___ **4. A U.S. Coast Guard approved life vest.**

___ **5. A lifesaving skiff available in the Bay below.**

Are both workers properly protected from the vapors *and* the asbestos? Below are several possible answers. Choose the right one.

___ **1. The painter's organic vapor respirator is adequate protection against methylene chloride.**

___ **2. Methylene chloride has no warning properties at the permissible exposure level (PEL) of 500 PPM. Therefore, the painter should wear a supplied-air respirator.**

___ **3. The problem is compounded because the painter is exposed to the floorcoverer's asbestos dust and the floorcoverer is exposed to the painter's methylene chloride. Both workers should be wearing continuous flow supplied-air respirators.**

___ **4. Neither the painter nor the floorcoverer needs a respirator because their exposures are well below the permissible exposure levels.**

___ **5. In any case, they should both wear jackets and open a couple of windows.**

What additional health hazards are the painter and the floorcoverer exposed to in this situation? Below are four possibilities. Check the one you think is correct.

___ **1. Methylene chloride and asbestos dust combine chemically to produce a severe synergistic effect known as mizomeliomoth, which is usually fatal.**

___ **2. Asbestos dust causes acne.**

___ **3. The noise from the sander is excessive and may cause temporary or permanent hearing loss.**

___ **4. With all the windows and doors closed, the workers are going to run out of breathable air.**

Following are four possible respirators. Choose the best one for the job.

___ 1. **A disposable non-toxic particle mask.**

___ 2. **An abrasive blasting helmet.**

___ 3. **An organic vapor respirator.**

___ 4. **A powered air-purifying respirator.**

Following are six other possibilities for protecting yourself against asbestos exposure. Check the ones you think are correct.

___ **1. When removing asbestos-contaminated clothes, never shake them out.**

___ **2. Do not remove the powered air-purifying respirator until you are well out of the contaminated work area.**

___ **3. Use a pre-mixed spackle compound.**

___ **4. Use the wet-sweeping method during clean-up.**

___ **5. Leave the work area during your coffee breaks.**

___ **6. Look for spackle that does not contain asbestos. But remember that the substitute substance may also be hazardous.**